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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,339	11/04/2003	Gultekin Erdem	CH-8006/LeA 36,004	4934
34947	7590	12/14/2005	EXAMINER	
LANXESS CORPORATION 111 RIDC PARK WEST DRIVE PITTSBURGH, PA 15275-1112			MANOHARAN, VIRGINIA	
			ART UNIT	PAPER NUMBER
			1764	
DATE MAILED: 12/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/701,339	ERDEM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Virginia Manoharan	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/4/03 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors, e.g., typographical, grammar, idiomatic, syntax and etc. Applicants' cooperations are requested in correcting any errors of which applicants may become aware in the specification.

The abstract of the disclosure is objected to because of the inclusion of legal phraseology often used in patent claims such as "means of " in line 2. Correction is required. See MPEP § 608.01(b).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a). The term "characterized in that", recited in claims 1-8 , is not a recitation of positive, manipulative, method/process steps. Also, it is unclear whether the limitation(s) recited prior the "characterized in that" is to be regarded as part of applicants' invention? Applicants should recite claim 1 in Jepson -format (if intended) to delineate that which is an improvement in the art.
- b). The claims or at least part of the claims are recited in passive rather than active steps, e.g., the recitation of "by extractive rectification" in claim 1, line 2 .

Art Unit: 1764

- c). The addition of the word "type" such as in "of this type" renders an otherwise definite expressions indefinite at it extends the scope of the expression. Ex parte Copenhaver, 109 USPTO 118 Bd (1955). See e.g., claim 1, lines 17 and 25.
- d). The claimed "in particular" in claims 6-7 fails to ascertain the claimed invention with precision.
- e). The term "fine" as in "fine purification" in claim 9 is a relative term which renders the claim indefinite. The term "fine" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
- f). It is unclear what constitute the "desired isomer" claimed in claim 9.
- g). Claim 11 is at odds with claim 1, the claim from which it depends. The preamble of claim 1 recites a "process for the separation of dichlorobenzene mixtures", whereas claim 11 recites "The process for conducting extractive distillation" . [ A dependent claim incorporates every features of the claim from which it depends and cannot change nor orient the limitation already recited in the independent claim ].
- i). It is unclear what dichlorobenzene has been extractively distilled or rectified by the agent such that the separation has been effectuated. That is, what constitute the bottoms and the overhead products of rectification or distillation?

Claims 1-11 are objected to because of the following reasons:

- a). The inconsistent used of terminology in the claims is improper. For examples:
  - 1). "extractive distillation", in claim 10, line 1, as opposed to " extractive rectification" in claim 10, line 3. See also claim 11.

Art Unit: 1764

2). "recovery" in claim 8 as opposed to "separating" in claim 1, line 5.

b). Note typographical error such as "vapour" in claim 8 which should be –vapor—as the latter is the term normally used in the U.S.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikatsu et al (3,800,002) or Berg (4,292,142) and Holtzapple et al (6,478,965) in view of Chanel (3,847,755) .

The process for conducting extractive distillation comprising providing phosphoric esters and/or phosphine oxides, as extracting agents for the extractive rectification, as broadly claimed in claims 1 and 10, is known in the art, as taught by the above combination of references. See e.g., the formulas in cols 1-2, and col. 2, lines 42-60 of Chikatsu (for the claimed phosphoric esters ); Table IV in col. 7 of Berg (for the claimed phosphoric esters); and col. 3, lines 40-42 of Holtzapple (for the claimed of phosphine oxide). The processes of the above combined references differ from the claimed invention in that claim 1, for example, recites the separation of dichlorobenzene mixtures containing m- and p-dichlorobenzenes. However, to substitute Chanel's feedstream supra, for the feedstreams of anyone of the above references, so as to arrive at the claimed invention, would have been obvious to one of ordinary skill in the art since Berg's compounds, for example, used in the separation of

Art Unit: 1764

ethylbenzene from para and meta xylenes by extractive distillation, belong to the same family as the claimed materials; and since all the references are directed to similar processing environment, i.e., to an extractive distillation in the presence of an auxiliary compound used to change the relative volatilities of the constituents of a mixture in order to effect separation of a constituent from the mixture containing the same.

Claims 4-5 directed to pressures, pressure difference and numbers of theoretical plates; and claims 6-7 directed to weight ratios all deemed to be result-effective - variables which ordinarily are within the skilled of the art.

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

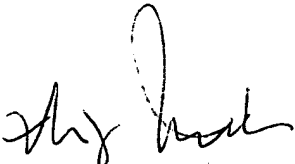
- a). Wissner et al discloses a process for the preparation of dichlorobenzenes.
- b). Pies et al discloses a process for isolating m-dichlorobenzene from mixtures of dichlorobenzene isomers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Manoharan whose telephone number is (571) 272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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TO: [illegible]  
DATE: 12/14/05  
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